IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A film formation method for forming a metal nitride film having a predetermined thickness on a target substrate ~~by heating the target substrate at a film formation temperature~~ within a process container ~~and performing a cycle comprising a first step and a second step at least once, such that the first step is arranged~~configured to ~~supply~~ be selectively supplied with a metal compound gas and a nitrogen-containing reducing gas, the film formation method being preset to ~~form a film of a metal nitride by CVD, and~~repeat a cycle a plurality of times while heating the target substrate at a film formation temperature, the ~~second step is arranged to stop the metal compound gas and supply the nitrogen-containing reducing gas,~~cycle comprising:

a first step of supplying the metal compound gas and the nitrogen-containing reducing gas into the process container, thereby forming a film of a metal nitride by CVD;

then, a first purge step of supplying a purge gas into the process container without supplying the metal compound gas and the nitrogen-containing reducing gas into the process container, thereby purging the process container;

then, a second step of supplying the nitrogen-containing reducing gas into the process container without supplying the metal compound gas into the process container; and

then, a second purge step of supplying a purge gas into the process container without supplying the metal compound gas and the nitrogen-containing reducing gas into the process container, thereby purging the process container,

wherein~~, in~~ the film formation~~, the target substrate is set at a~~ temperature ~~of~~ is set to be less than 450°C, the process container is set to have therein a total pressure of more than 100 Pa in the first and second steps, and the nitrogen-containing reducing gas is set to have a partial pressure of 30 Pa or less within the process container in the first step.

Claim 2 (Original): The film formation method according to claim 1, wherein a film thickness obtained by the cycle performed once is set to be 0.50 nm or less.

Claim 3 (Original): The film formation method according to claim 1, wherein, in the first step, the nitrogen-containing reducing gas is set to have a partial pressure of 20 Pa or less within the process container.

Claim 4 (Original): The film formation method according to claim 3, wherein a film thickness obtained by the cycle performed once is set to be 2.0 nm or less.

Claim 5 (Original): The film formation method according to claim 1, wherein, in the first step, the nitrogen-containing reducing gas is set to have a partial pressure of 15 Pa or less within the process container.

Claim 6 (Currently Amended): The film formation method according to claim 1, wherein~~, in~~ the film formation~~, the target substrate is set at a~~ temperature ~~of~~ is set to be 400°C or less.

Claim 7 (Currently Amended): A film formation method for forming a TiN film having a predetermined thickness on a target substrate ~~by heating the target substrate at a film formation temperature~~ within a process container ~~and performing a cycle comprising a first step and a second step at least once, such that the first step is arranged to supply~~ configured to be selectively supplied with a Ti compound gas and a nitrogen-containing reducing gas ~~to form a film of TiN by CVD, and~~, the film formation method being preset to repeat a cycle a

plurality of times while heating the target substrate at a film formation temperature, the ~~second step is arranged to stop the Ti compound gas and supply the nitrogen-containing reducing gas,~~cycle comprising:

a first step of supplying the Ti compound gas and the nitrogen-containing reducing gas into the process container, thereby forming a film of TiN by CVD;

then, a first purge step of supplying a purge gas into the process container without supplying the Ti compound gas and the nitrogen-containing reducing gas into the process container, thereby purging the process container;

then, a second step of supplying the nitrogen-containing reducing gas into the process container without supplying the Ti compound gas into the process container; and

then, a second purge step of supplying a purge gas into the process container without supplying the Ti compound gas and the nitrogen-containing reducing gas into the process container, thereby purging the process container,

wherein~~, in~~ the film formation~~, the target substrate is set at a~~ temperature ~~of~~is set to be less than 450°C, the process container is set to have therein a total pressure of more than 100 Pa in the first and second steps, and the nitrogen-containing reducing gas is set to have a partial pressure of 30 Pa or less within the process container in the first step.

Claim 8 (Original): The film formation method according to claim 7, wherein the Ti compound gas is $TiCl_4$ and the nitrogen-containing reducing gas is NH_3.

Claim 9 (Original): The film formation method according to claim 7, wherein a film thickness obtained by the cycle performed once is set to be 0.50 nm or less.

Claim 10 (Original): The film formation method according to claim 7, wherein, in the first step, the nitrogen-containing reducing gas is set to have a partial pressure of 20 Pa or less within the process container.

Claim 11 (Original): The film formation method according to claim 10, wherein a film thickness obtained by the cycle performed once is set to be 2.0 nm or less.

Claim 12 (Original): The film formation method according to claim 7, wherein, in the first step, the nitrogen-containing reducing gas is set to have a partial pressure of 15 Pa or less within the process container.

Claim 13 (Currently Amended): The film formation method according to claim 7, wherein~~, in~~ the film formation~~, the target substrate is set at a~~ temperature ~~of~~is set to be 400°C or less.

Claim 14 (Original): The film formation method according to claim 7, wherein, in the first step, the nitrogen-containing reducing gas is set at a flow rate of 20 mL/min or more.

Claim 15 (Original): The film formation method according to claim 7, wherein, in the first step, the Ti compound gas is set to have a partial pressure of more than 10 Pa and not more than 50 Pa.

Claim 16 (Original): The film formation method according to claim 7, wherein the TiN film is set to have a resistivity of 800 μΩ-cm or less.

Claims 17-40 (Canceled).

Claim 41 (New - Withdrawn): The film formation method according to claim 1, wherein the metal nitride film is set to have a resistivity R of 800 μΩ-cm or less calculated by a following formula (A):

$R = 115.75 \times Ln(T_{hk}) + 71.576 \times Ln(P_N) + 418.8$ ...(A)

where P_N (Pa) denotes a partial pressure of the nitrogen-containing reducing gas within the process container in the first step, and T_{hk} (nm) denotes a film thickness obtained by the cycle performed once.

Claim 42 (New - Withdrawn): The film formation method according to claim 41, wherein the metal nitride film is set to have a resistivity R of 800 μΩ-cm or less calculated by a following formula (B):

$R = 115.75 \times Ln(T_{hk}) + 71.576 \times Ln(P_N) - 57.685 \times Ln(F_N) + 614$ ...(B)

where F_N (mL/min) denotes a flow rate of the nitrogen-containing reducing gas in the first step.

Claim 43 (New - Withdrawn): The film formation method according to claim 41, wherein the metal nitride film is set to have a resistivity R of 800 μΩ-cm or less calculated by a following formula (C):

$R = 115.75 \times Ln(T_{hk}) + 71.576 \times Ln(P_N) -57.685 \times Ln(F_N) - 2844.6Ln(T_W) + 17658.3$ ...(C)

where F_N (mL/min) denotes a flow rate of the nitrogen-containing reducing gas in the first step, and T_W (°C) denotes temperature of the target substrate.

Claim 44 (New - Withdrawn): The film formation method according to claim 7, wherein the metal nitride film is set to have a resistivity R of 800 μΩ-cm or less calculated by a following formula (A):

$$R = 115.75 \times Ln(T_{hk}) + 71.576 \times Ln(P_N) + 418.8 \text{ ...(A)}$$

where P_N (Pa) denotes a partial pressure of the nitrogen-containing reducing gas within the process container in the first step, and T_{hk} (nm) denotes a film thickness obtained by the cycle performed once.

Claim 45 (New - Withdrawn): The film formation method according to claim 44, wherein the metal nitride film is set to have a resistivity R of 800 μΩ-cm or less calculated by a following formula (B):

$$R = 115.75 \times Ln(T_{hk}) + 71.576 \times Ln(P_N) - 57.685 \times Ln(F_N) + 614 \text{ ...(B)}$$

where F_N (mL/min) denotes a flow rate of the nitrogen-containing reducing gas in the first step.

Claim 46 (New - Withdrawn): The film formation method according to claim 44, wherein the metal nitride film is set to have a resistivity R of 800 μΩ-cm or less calculated by a following formula (C):

$$R = 115.75 \times Ln(T_{hk}) + 71.576 \times Ln(P_N) -57.685 \times Ln(F_N) - 2844.6Ln(T_W) + 17658.3 \text{ ...(C)}$$

where F_N (mL/min) denotes a flow rate of the nitrogen-containing reducing gas in the first step, and T_W (°C) denotes temperature of the target substrate.